

The percentage of attack among the varieties ranged from 6.8 to 13.3.

Based on these preliminary observations, the extent of damage in yield of grains has to be investigated in future.

TAMIL NADU AGRICULTURAL
UNIVERSITY,
COIMBATORE-3,
January 6, 1972.

V. D. GURUSWAMY RAJA
U. S. NATARAJAN

19. SYSTEMATICS OF INDIAN RHOPALIDAE (HEMIPTERA)

Earlier workers disagreed upon the rank and the name of this group of insects. It had been considered a subfamily of the family Coreidae under the name Corizinae for several years. Recently, Harris (1942), Schaefer (1965) and Chopra (1967) have pointed out that this group deserves the status of a family and the correct name should be Rhopalidae, Amyot & Serville rather than Corizidae, Douglas & Scott. The Indian representatives of this family have been described and listed by Distant (1902 & 1918) in the subfamily Corizinae. Distant (1902) followed the earlier classification of the group and has indicated that the Indian species belong to two divisions: Corizaria, Stal and Serinetharia, Stal. In 1902 he included four species of a genus *Corizus* in the division Corizaria and six species of the genus *Serinetha* in the division Serinetharia. In 1918 he added six new species to his genus *Corizus* and two additional genera: *Agraphopus* Stal, and *Therapha* Amyot & Serville each containing two species. According to the most recent classification (Chopra 1967) the family is divided into two subfamilies: Rhopalinae, Amyot & Serville and Serinethinae, Stal. The former is considered to be composed of six tribes: Niesthrini, Chopra, Rhopalini, Amyot & Serville, Chorosomini, Douglas & Scott, Harmostini Stal, Maccévithini, Chopra and Corizomorphini, Chopra while the latter included only one group. The Indian species of this family belong to the subfamily Serinethinae and the tribes Niesthrini, Rhopalini and Chorosomini of the subfamily Rhopalinae.

Among Serinethinae, *Leptocoris* Hahn has priority over *Serinetha* Spinola. The species listed by Distant under *Serinetha*, therefore, pertain to *Leptocoris*. Gross (1960) synonymized *dallasi* Dohrn with *augur* F., while Chopra (1971) has described a new species *L. arorai* from south India. The genus *Leptocoris* as recognized now contains nine species and three subspecies from India.

Among the subfamily Rhopalinae, *Corizus* Fallén belongs to the tribe Rhopalini and has priority over *Therapha* Amyot & Serville. The

species listed under *Therapha*, therefore, belong to *Corizus*. Kerzhner (1962) synonymized *diluta* Distant with *limbatus* Reuter. The genus *Corizus* is now represented by only one species. The genus *Agraphopus* Stal belongs to the tribe Chorosomini and is represented by one species while the second species *orientalis* (Distant) belongs to the genus *Leptoceraea* Jakovlev. The genus *Corizus* Fallén as considered by Distant, has been divided into several genera. The Indian species listed under *Corizus* actually belong to the genus *Liorhyssus* Stal which is now included in the tribe Niesthrini. Chopra (1967) for the first time recorded the occurrence of *Peliochrous* Stal also of the tribe Niesthrini from south India. Specimens have also been collected from Chandigarh, India.

CHECKLIST OF INDIAN RHOPALIDAE

The descriptions of the species recorded by Distant are mainly based on colour differences which are quite unreliable as the colour of most of the Rhopalid species studied by me vary in a bewildering manner. Until the type specimens are studied further the Indian Rhopalidae are considered to be represented by the following taxa. Some of the species listed below, as indicated, have not actually been reported from India but most probably these will be discovered sooner or later.

Family RHOPALIDAE Amyot & Serville

Subfamily RHOPALINAE Amyot & Serville

Tribe Niesthrini Chopra

Genus *Peliochrous* Stal

Peliochrous Stal, 1873

Type species : *Corizus nigromaculatus* Stal, 1855 ; monobasic.

P. nigromaculatus Stal, 1855, Locality : Chandigarh & South India.

Tribe Rhopalini Amyot & Serville

Genus *Corizus* Fallén

Corizus Fallén, 1814, *Therapha* Amyot & Serville, 1843, *Rhopalus* Spinola, 1837. *Consivius* Distant, 1909.

Type species :—*Corizus* : *Cimex hyoseyami* L., 1758 ; fixed by Brulle, 1835.

Therapha : *Cimex hyoseyami* L., 1758 ; fixed by Oshanin, 1912, *Consivius* : *Consivius collinus* Distant, 1909 = *Cimex hyoseyami* L., 1758 ; monobasic.

C. hyoseyami (L.), 1758. Locality : Simla Hills, Kumaon and Shamkhet.

Therapha diluta Distant, 1918. (Syn. by Kerzhner, 1962).

Genus *Liorhyssus* Stal

Liorhyssus Stal, 1870, *Colobatus* Mulsant & Rey, 1870.

Type species : *Liorhyssus* : *Lygaeus hyalinus* F., 1794 ; fixed by Reuter, 1888. *Colobatus* :

Corizus gracilis Herrich-Schaeffer, 1835 = *Lygaeus hyalinus* F., 1794 ; monobasic.

- L. bengalensis* (Dallas) 1852. Locality : North Bengal, Bombay, Bor Ghat & Pusa.
L. brevicollis (Motsch) 1863. Locality : Ceylon.
L. imperialis (Distant) 1918. Locality : Bombay & Dehra Dun.
L. macropictus (Distant) 1918. Locality : Chikkaballapura, Nilgiri Hills & Madras.
L. multinaculatus (Distant) 1918. Locality : Chikkaballapura, South India.
L. parvipictus (Distant) 1918. Locality : Chikkaballapura, South India.
L. pronotalis (Distant) 1918. Locality : Dehra Dun.
L. rubicundus (Signoret) 1859. Locality : Ceylon & Dehra Dun.
*L. semicruciatu*s (Motsch) 1863. Locality : Ceylon.
L. subfasciatus (Distant) 1918. Locality : Ceylon.

Tribe Chorosomini Douglas & Scott

Genus *Agraphopus* Stal

Agraphopus Stal, 1872

Type species : *Agraphopus lethierryi* Stal, 1872 ; monobasic.

A. lethierryi Stal, 1872. Locality : Chikkaballapura, South India.

Genus *Leptoceraea* Jakovlev

Leptoceraea Jakovlev, 1874

Type species : *Leptoceraea viridis* Jakovlev, monobasic.

L. orientalis Distant 1918. Locality : North Bengal & Pusa.

Subfamily SERINETHINAE Stal

Genus *Leptocoris* Hahn

Leptocoris Hahn, 1831. *Serinetha* Spinola, 1837. *Lygaemorphus* Blanchard, 1840. *Pyrrhotes* Westwood, 1842. *Tynotoma* Amyot & Serville 1843. *Boisea* Kirkaldy, 1910.

Type species : *Leptocoris* : *Leptocoris rufus* Hahn, 1831=*Lygaeus abdominalis* F., 1803 ; monobasic. *Tynotoma* : *Tynotoma vittata* Amyot & Serville, 1843 ; monobasic (nomen dubium). *Boisea* : *Boisea vittata* Kirkaldy, 1910=*Leptocoris trivittatus* Say, 1825 ; monobasic.

L. abdominalis (F.) 1803. Locality : Calcutta & Assam.

L. abdominalis abdominalis (F.) 1803.

L. abdominalis blztei Gross 1960.

L. abdominalis taprobanensis (Dallas) 1852.

L. arorai Chopra 1971. Locality : Nilgiri and south Malabar Hills.

L. augur (F.) 1781. Locality : Bombay, Calcutta & Madras.

L. dallasi (Dohorn) 1860. (Syn. by Gross, 1960).

L. coimbatorensis Gross 1960. Locality : Coimbatore.

L. corniculata (Stal) 1866. Locality : Western India.

L. coxalis (Kirby) 1891. Locality : Ceylon.

L. rufomarginata (F.) 1794. Locality : Calcutta & Nicobar Islands.

L. subrufescens (Kirby) 1888. Locality : Ceylon and Christmas Island.

L. vicina (Dallas) 1852. Locality : Ceylon.

DEPARTMENT OF ENTOMOLOGY,
 HARYANA AGRICULTURAL UNIVERSITY,
 HISSAR,
 August 18, 1972.

N. P. CHOPRA

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20. DISTRIBUTIONAL RECORDS OF MUSCIDAE (DIPTERA)

Muscidae (Diptera) contains probably the world's commonest and most ubiquitous insects, the adults of which transmit several dangerous and widespread diseases including typhoid fever, several kinds of dysentery, cholera and trachoma while a few members of the family have been listed as parasitic in nature. The following muscids were collected at Damoh, Madhya Pradesh and Mirzapur, Uttar Pradesh.

Species	Date of collection
<i>Atherigona</i> sp.? <i>bella</i> Frey	.. 14- vii-1966
<i>Dichaetomyia nubiana</i> Bigot	.. 26- vii-1967
<i>Fannia leucosticta</i> Mg.	.. 28- xii-1966
<i>Gymnodia tonitru</i> Wied.	.. 9- vi-1966
<i>Helina nervosa</i> Stein	.. 11- viii-1967
<i>Linnophora himalayensis</i> Brun.	.. 3- vii-1967
<i>Lispe leucospila</i> Wied.	.. 24- vii-1966
<i>Musca domestica</i> L.	.. 2- viii-1966
<i>M. illingworthi</i> Patton	.. 9- ix-1963
<i>M. pattoni</i> Aust.	.. 2- vii-1966
<i>M. ventrosa</i> Wied.	.. 9- ix-1963
<i>Ophyra</i> sp.	.. 19- iii-1966
<i>Orthellia</i> sp.	.. 12- viii-1967
<i>Orchisia costata</i> Mg.	.. 18- viii-1967
<i>Paregle cinerella</i> Fall.	.. 11 -vi-1966
<i>Passeromyia heterochaeta</i> Vill.	.. 14- ix-1966
<i>Pegomya</i> sp.	.. 16- viii-1966
<i>Stomoxys calcitrans</i> L.	.. 16 -ii-1967
<i>Synthesiomia nudiseta</i> Wulp.	.. 14- iii-1966

I am thankful to Dr S. C. Sen Gupta, Director and Dr A. Bhattacharya, Entomologist of the Institute, for providing facilities to work. Thanks are also due to Mr B. P. Mehra, Scientific Officer of the Institute, for going through the manuscript